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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,201	06/30/2003	Gaurav Sharma	114790	1200

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EXAMINER	
HUNG, YUBIN	
ART UNIT	**PAPER NUMBER**
2624	

NOTIFICATION DATE	DELIVERY MODE
09/17/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/604,201	SHARMA ET AL.	
	Examiner	Art Unit	
	Yubin Hung	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) *12-40* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/30/03,10/27/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. This application contains claims directed to the following patentably distinct species:

I. Species of Fig. 10, related to claims 1-11, directs to the selection of color profiles

II. Species of Fig. 9, related to claims 12-24, directs to the generation of color profiles

III. Species of Figs. 6 & 7, related to claims25-40, directs to the determination of the underlying image marking process

The species are independent or distinct because claims to the different species recite the mutually exclusive characteristics of such species. In addition, these species are not obvious variants of each other based on the current record.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, none is generic.

There is an examination and search burden for these patentably distinct species due to their mutually exclusive characteristics. The species require a different field of search (e.g., searching different classes/subclasses or electronic resources, or employing different search queries); and/or the prior art applicable to one species would not likely be applicable to another species; and/or the species are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species to be examined even though the requirement may be traversed (37 CFR 1.143) **and (ii) identification of the claims encompassing the elected species**, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

The election of the species may be made with or without traverse. To preserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the election of species requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable on the elected species.

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the species unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other species.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141.

2. During a telephone conversation with applicant's representative Mr. Thomas J. Pardini on 08/06/07 a provisional election was made with traverse to prosecute the invention of Species I, claims 1-11. Affirmation of this election must be made by applicant in replying to this Office action. Claims 12-40 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Objections

3. Claim 8 is objected to because of the following informalities:

- Claim 3, last line: for consistency consider changing "color profiles" to "color characterization profiles;" do the same for claims 4 and 5
- Claim 8, last line: "scan" should have been "scanned."

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Tashiro et al. (US 5,748,773).

Regarding claim 1, Tashiro discloses

- scanning the printed image
  [Abstract; Ref. 1022 of Figs. 2 & 3 (scanner); Col. 5, lines 50-54]
- determining spatial characteristics of the printed image from the scanned image data
  [Fig. 2, ref. 38; Fig. 8, refs. S1 & S2; Col. 6, lines 37-41 (note that the histogram is formed using both the luminance and the chrominance information);Col. 7, lines 66-67; Col. 9, lines 39-50]
- comparing the spatial characteristics of the scanned printed image with spatial characteristics associated with color characterization profiles

[Fig. 8, ref. S3; Fig. 11, refs. S31-S33; Col. 10, lines 9-19. Note that hmax, lmax, lmin lpeak, HLIM, ILIM and IWLIM are spatial characteristics that are used in the comparison]

- selecting one or more color profiles based on the comparison of the spatial characteristics
[Fig. 8, ref. S3; Fig. 11; Figs. 12-14 (conversion tables, or profiles, selected based on comparison result); Col. 11, lines 12-53]

6. Regarding claim 9, note that the selection is made automatically [Fig. 8, ref. S3; Fig. 11; Figs. 12-14; Col. 11, lines 12-53]

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 2, 3, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tashiro et al. (US 5,748,773) as applied to claims 1 and 9 above, and further in view of Kasutani (US 7,236,652) and Sampath et al. (US 6,665,425).

9. Regarding claim 2, Tashiro discloses all limitations of its parent, claim 1, in particular, the comparison of spatial characteristics, but not expressly the following:

- wherein the spatial characteristics associated with color characterization profiles are determined from scans of color characterization targets used in creating the color characterization profiles

However, Kasutani discloses associating the feature vector (i.e., characteristics that can be used to identify the image) determined from an image with that image [Fig. 1, refs. 102, 103, 202 & 203; Col. 12, lines 24-34] and Sampath discloses using test patterns (color characterization targets) to calibrate a document processing system [Fig. 1, refs. 110 & 120; Fig. 10, refs. S150, S180 & S230; Col. 2, lines 59-63; Col. 6, line 60-Col. 7, line 7; Col. 11, lines 23-46]. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Tashiro with the teachings of Sampath and Kasutani as recited above to obtain the invention as specified in claim 2. The reason for doing so would have been to be able to calibrate the system to properly process the data having the same characteristics as the test patterns, as well as to select the most suitable profile (using the characteristics) derived from the image (of a target) so that the system can be properly calibrated for the kind of data to be processed.

10. Regarding claim 3, note that per the analysis of claim 2, the test pattern used for quality assessment in order to perform calibration as required is analyzed first to generate data (including spatial characteristics) [Sampath: Col. 6, line 60-Col. 7, line 6] in one diagnostic routine [Sampath: Fig. 10], i.e., at the same time. (Note that to perform the calibration it would have been necessary to also generate required data such as a color characteristics profile.)

11. Regarding claims 6 and 7, Kasutani further discloses

- (claim 6) wherein the comparing comprises computation of a distance measure between spatial characteristics of the image and spatial characteristics associated with the color profile
(claim 7) wherein the selecting further comprises choosing one or more color profiles which are closest with respect to the distance measure
[Fig. 1, ref. 109; Col. 13, lines 27-33]

*****

12. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tashiro et al. (US 5,748,773), Kasutani (US 7,236,652) and Sampath et al. (US 6,665,425) as applied to claims 2, 3, 6 and 7 above, and further in view of TIFF6 (TIFF Revision 6.0, June 03, 1992, pp. 8, 9, 13-16).

13. Regarding claims 4 and 5, the combined invention of Tashiro, Kasutani and Sampath discloses all limitations of their parent, claim 3 but not the following:

- (claim 4) wherein the spatial characteristics associated with the color characterization profile are stored with the color profiles
- (claim 5) wherein the spatial characteristics associated with a color profile are stored within private tags in the color profile

However, TIFF teaches using a data structure that has private tags for storing special data (e.g., the spatial characteristics recited in the claim), along with the main data (e.g., the profile). It therefore would have been obvious to one of ordinary skill in the art to modify the combined invention of Tashiro, Kasutani and Sampath with the teachings of TIFF6 as recited above to obtain the inventions as specified in claim 4 and 5. The reason would have been to have the profile to be readily available (and therefore improves processing efficiency) when it is selected (by comparison of the associated spatial characteristics), as well as to allow applications not having the ability to use the

spatial characteristics to ignore them since they are only meaningful to the inventive entity, as indicated in TIFF6, P. 8 (regarding private fields).

*****

14. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tashiro et al. (US 5,748,773) as applied to claims 1 and 9 above, and further in view of Swann et al. (US 6,788,819).

15. Regarding claim 8, Tashiro discloses all limitations of its parent, claim 1 but not the following, which is taught by Swann:

- statistically analyzing the scan of the printed image and determining spatial variations in the printed image based at least on the results of the statistical analysis of the scan image data
[Fig. 1, refs. 6-16; Col. 2, lines 16-34. Note that the variances indicate spatial variations]

Therefore it would have been obvious to one of ordinary skill in the art to modify Tashiro with the teaching of Swann as recited above to obtain the invention as specified in claim 8. The motivation would have been to be able to determine the image type (such as printed on paper, plastic or partially transparent substrate), as Swann indicates in Col. 1, lines 29-50.

*****

16. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tashiro et al. (US 5,748,773) as applied to claims 1 and 9 above, and further in view of Chen (US 6,941,121) and Maeda et al. (US 5,682,466).

17. Regarding claim 10, Tashiro discloses all limitations of its parent, claim 1 but not the following:

- wherein selecting one or more color profiles is performed by blending multiple color profiles using at least weighting factors determined from said comparison of the spatial characteristics

However, Chen teaches using weighted combination of lookup tables for calibration [Col. 11, lines 59-67] and Maeda further teaches having the weights determined by similarity (inherently resulted from a comparison) [Fig. 7, ref. 708; Col. 9, line 55-Col. 10, line 16].

Therefore it would have been obvious to one of ordinary skill in the art to modify Tashiro with the teaching of Chen and Maeda as recited above to obtain the invention as specified in claim 10. The reason would have been to reduce sensitivity to the comparison result (which is well known to have built-in uncertainty), as indicated by Chen in Col. 10, lines 66-67 (the uncertainty in that case being the transient fluctuations); having weights depending on the similarity also can improve the accuracy, as Maeda indicates in Col. 10, lines 11-15.

*****

18. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tashiro et al. (US 5,748,773) as applied to claims 1 and 9 above, and further in view of Newman (US 6,603,483) and Milton et al. (US 2003/0117639).

19. Regarding claim 11, Tashiro discloses all limitations of its parent, claim 1 but not the following:

- wherein selecting one or more color profiles comprises: automatically processing a group of pre-selected color profiles to generate candidate color profiles; and manually selecting one or more color profiles from the candidate color profiles

However, Newman teaches having a user select a profile from a list [Fig. 5A, ref. 501; Col. 11, lines 20-25] and Milton further teaches selecting candidate profiles from a known (i.e., pre-selected) profiles [Fig. 7a, refs. 500 (known profiles) & 514 (select candidates); P. 9, paragraph 68].

Therefore it would have been obvious to one of ordinary skill in the art to modify Tashiro with the teaching of Newman and Milton as recited above to obtain the invention as specified in claim 11. The reason would have been to satisfy the user's desire [Newman: Col. 11, lines 23-25], as well as to be more precise in the selection of the profiles to use [Milton: Paragraph 68, last 3 lines].

Conclusion and Contact Information

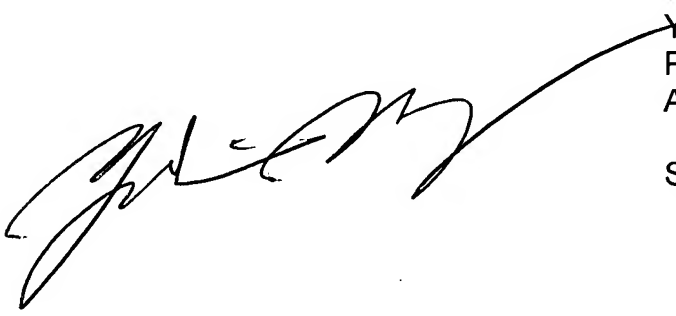
20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Shiau et al. (US 5,239,430) – discloses automatic determination of the image type [Fig. 1]
- Irwin et al. (US 6,522, 934) – indicates a desire to have the ability for the system to select a list of candidates for subsequent manual selection [Col. 2, lines 25-35]
- Sharma (US 6,353,675) – discloses analyzing an image to determine its marking process

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yubin Hung whose telephone number is (571) 272-7451. The examiner can normally be reached on 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew C. Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Yubin Hung
Patent Examiner
Art Unit 2624

September 6, 2007